

#3/A

PATENT
Docket No.: 19603/2986 (CRF D-1940B)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants	:	Qiu et al.)	Examiner:
)	To Be Assigned
Serial No.	:	Division of 08/984,207)	
)	Art Unit:
Filed	:	Herewith)	To Be Assigned
)	
For	:	HYPERSENSITIVE RESPONSE INDUCED)	
		RESISTANCE IN PLANTS BY SEED)	
		TREATMENT)	

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Box: Patent Application

Dear Sir:

Please amend the above-identified application as follows:

In the Specification:

Please replace the paragraph on page 1, lines 5-7, with the following:

This application is a division of U.S. Patent Application Serial No. 08/984,207
filed December 3, 1997, which claims the benefit of U.S. Provisional Patent Application
Serial No. 60/033,230 filed December 5, 1996.

In the Claims:

Please cancel claims 1-40 without prejudice and replace claims 42 and 55-57
as amended below:

a2 42. (Amended) A method according to claim 41, wherein the hypersensitive response elicitor polypeptide or protein corresponds to that derived from a pathogen selected from the group consisting of *Erwinia*, *Pseudomonas*, *Xanthomonas*, *Phytophthora*, and mixtures thereof.

55. (Amended) A plant produced by the process comprising:
applying a hypersensitive response elicitor protein or polypeptide in a non-infectious form to a plant seed under conditions effective to impart pathogen resistance to a plant grown from the seed;
planting in soil the seed to which the hypersensitive response elicitor has been applied; and
propagating a plant from the planted seeds.

56. (Amended) A plant seed obtained from the plant of claim 55.

57. (Amended) A plant propagule obtained from the plant of claim 55.

Please add new claims 61-77 as follows:

61. A method of imparting pathogen resistance to plants comprising:
transforming a plant with a DNA molecule encoding a hypersensitive response elicitor polypeptide or protein under conditions effective to impart pathogen resistance to the transgenic plant.

a4 62. A method according to claim 61, wherein the hypersensitive response elicitor polypeptide or protein corresponds to that derived from a pathogen selected from the group consisting of *Erwinia*, *Pseudomonas*, *Xanthomonas*, *Phytophthora*, and mixtures thereof.

63. A method according to claim 62, wherein the hypersensitive response elicitor polypeptide or protein corresponds to that derived from *Erwinia chrysanthemi*.

64. A method according to claim 62, wherein the hypersensitive response elicitor polypeptide or protein corresponds to that derived from *Erwinia amylovora*.

65. A method according to claim 62, wherein the hypersensitive response elicitor polypeptide or protein corresponds to that derived from *Pseudomonas syringae*.

66. A method according to claim 62, wherein the hypersensitive response elicitor polypeptide or protein corresponds to that derived from *Pseudomonas solanacearum*.

67. A method according to claim 62, wherein the hypersensitive response elicitor polypeptide or protein corresponds to that derived from *Xanthomonas campestris*.

68. A method according to claim 62, wherein the hypersensitive response elicitor polypeptide or protein corresponds to that derived from a *Phytophthora* species.

69. A method according to claim 61, wherein the transgenic plant is selected from the group consisting of dicots and monocots.

70. A method according to claim 69, wherein the plant is selected from the group consisting of rice, wheat, barley, rye, oats, cotton, sunflower, canola, peanut, corn, potato, sweet potato, bean, pea, chicory, lettuce, endive, cabbage, cauliflower, broccoli, turnip, radish, spinach, onion, garlic, eggplant, pepper, celery, carrot, squash, pumpkin, zucchini, cucumber, apple, pear, melon, strawberry, grape, raspberry, pineapple, soybean, tobacco, tomato, sorghum, and sugarcane.

71. A method according to claim 69, wherein the plant is selected from the group consisting of rose, *Saintpaulia*, petunia, *Pelargonium*, poinsettia, chrysanthemum, carnation, and zinnia.

72. A method according to claim 61, wherein the pathogen to which the transgenic plant is resistant is selected from the group consisting of viruses, bacteria, fungi, and combinations thereof.

73. A method according to claim 61, further comprising:
applying the hypersensitive response elicitor polypeptide or protein to
the transgenic plant to enhance the plant's pathogen resistance.

74. A method according to claim 61, wherein the hypersensitive response
elicitor protein or polypeptide is a fungal hypersensitive response elicitor.

at
control

75. A transgenic plant produced by the process comprising:
transforming a plant with a DNA molecule encoding a hypersensitive
response elicitor polypeptide or protein under conditions effective to impart pathogen
resistance to the transgenic plant.

76. A transgenic plant seed obtained from the transgenic plant of claim 75.

77. A transgenic plant propagule obtained from the transgenic plant of
claim 75.

REMARKS


Written descriptive support for the newly introduced claims is provided at page 36, line 6 to page 37, line 12. The cited text specifically recites that "transgenic plants transformed with a DNA molecule encoding a hypersensitive response elicitor polypeptide or protein are produced according to procedures well known in the art, such as biolistics or *Agrobacterium* mediated transformation." Moreover, the cited text recites that such "transgenic plants themselves could be grown under conditions effective to be imparted with pathogen resistance" and, "once transgenic plants of this type are produced, transgenic seeds are recovered." Topical treatment of the transgenic plants with a hypersensitive response elicitor is also disclosed.

In view of the foregoing, ample written descriptive support is provided for the newly introduced claims. No new matter has been introduced.

Applicants respectfully request examination of the presently claimed invention.

Respectfully submitted,

Date: January 19, 2001



Edwin V. Merkel
Registration No. 40,087

Nixon Peabody LLP
Clinton Square, P.O. Box 31051
Rochester, New York 14603
Telephone: (716) 263-1128
Facsimile: (716) 263-1600

42. (Amended) A method according to claim ~~39~~ **41**, wherein the hypersensitive response elicitor polypeptide or protein corresponds to that derived from a pathogen selected from the group consisting of *Erwinia*, *Pseudomonas*, *Xanthomonas*, *Phytophthora*, and mixtures thereof.

55. (Amended) A plant produced by the ~~method of claim 22~~ **process comprising:**
applying a hypersensitive response elicitor protein or polypeptide in a non-infectious form to a plant seed under conditions effective to impart pathogen resistance to a plant grown from the seed;
planting in soil the seed to which the hypersensitive response elicitor has been applied; and
propagating a plant from the planted seeds.

56. (Amended) A plant seed **obtained** from the plant ~~produced by the method of claim 22~~ **of claim 55.**

57. (Amended) A plant propagule **obtained** from the plant ~~produced by the method of claim 22~~ **of claim 55.**